10/526,937

# EAST Search History

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| L1 | 416 | (568/618).CCLS. | US-PGPUB; USPAT; EPO; JPO | OR | OFF | 2007/07/01 19:49 |
| L2 | 207 | (568/619).CCLS. | US-PGPUB; USPAT; EPO; JPO | OR | OFF | 2007/07/01 19:57 |
| L3 | 381 | (568/620).CCLS. | US-PGPUB; USPAT; EPO; JPO | OR | OFF | 2007/07/01 20:14 |
| L4 | 456 | polyetherols | US-PGPUB; USPAT; EPO; JPO | OR | OFF | 2007/07/01 20:14 |
| L5 | 3 | l4 and (metal adj oxide adj hydroxide) | US-PGPUB; USPAT; EPO; JPO | OR | OFF | 2007/07/01 20:15 |

10/526,937

(FILE 'HOME' ENTERED AT 18:21:51 ON 01 JUL 2007)

FILE 'CAPLUS' ENTERED AT 18:28:25 ON 01 JUL 2007

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L1          27 S POLYETHEROL
L2           0 S L1 AND MULTIMETAL OXIDE
L3           1 S L1 AND ALKYLENE OXIDE
L4           8 S L1 AND CATALYST

=> d l3 bib abs

L3   ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2007 ACS on STN
AN   2004:605510  CAPLUS
DN   141:157890
TI   Procedure for the production of polyurethane integral-foam materials
IN   Falke, Peter; Schroeder, Heinz-juergen; Sattler, Ulf; Cappellani, Paul;
     Trinaistich, Adriano
PA   BASF Ag, Germany
SO   Ger. Offen., 10 pp.
     CODEN: GWXXBX
DT   Patent
LA   German
FAN.CNT 1
     PATENT NO.          KIND   DATE       APPLICATION NO.        DATE
     ---------------     ----   --------   --------------------   --------
PI   DE 10303172          A1    20040729   DE 2003-10303172       20030127
     WO 2004067607        A2    20040812   WO 2004-EP459          20040121
     WO 2004067607        A3    20060413
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
             CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
             LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
             NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
             TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
             IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM,
             GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW,
             MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
     CN 1771270           A     20060510   CN 2004-80002908       20040121
     EP 1664145           A2    20060607   EP 2004-703771         20040121
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
PRAI DE 2003-10303172     A     20030127
     WO 2004-EP459        W     20040121
AB   Polyurethane integral-foam materials with good solvent resistance are
     manufactured by conversion of (A) organic and/or modified organic
polyisocyanates
     with (B) polyetherol mixts. and (C) chain extenders and,
     optionally, (D) other NCO-reactive H-containing compds. in the presence of (D)
     water and/or (E) other blowing agents, (F) catalysts and, optionally, (G)
     further auxiliaries and additives, in which (B) possesses a functionality
     from 2 to 3 and consists of (B1) ≥1 polyether polyol based on
     propylene oxide (I) and/or butylene oxide (II) and ethylene oxide (III)
     with an III portion being >40% (based on total alkylene
     oxide), with a OH number 20-80 mg KOH/g and (B2) polyether polyol
     based on I and/or II with a OH number <600 mg KOH/g and, optionally, (B3)
     polyether polyol based on I and/or II and III with an III portion being
     <25% (based on total amount of alkylene oxide), with a
     OH number of 20-160 mg KOH/g and conversion with index <110, whereby the
     total weight of (B1) and (B3) being more than the weight of (B2) and the
amount of
     (C) being <15% (based on total B-G).  A typical foam was manufactured from a
     polyol mixture containing 73:27 III-I copolymer (IV) 79.1, 14:86 IV 2,
     polypropylene oxide 12 parts, and a polyisocyanate mixture containing Lupranate
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MI 20, Lupranate M20A 20, and Lupranate MES 60 parts.

=> d 14 1-8 bib abs

L4 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2006:449011 CAPLUS
DN 145:104040
TI Reactions of trithiocyanuric acid with oxiranes. IV. Analysis of the initial stages of the synthesis of polyetherols
AU Chmiel-Szukiewicz, Elzbieta; Lubczak, Jacek
CS Department of Organic Chemistry, Rzeszow University of Technology, Rzeszow, 35-959, Pol.
SO Journal of Applied Polymer Science (2006), 100(6), 4917-4920
CODEN: JAPNAB; ISSN: 0021-8995
PB John Wiley & Sons, Inc.
DT Journal
LA English
AB The course of the reaction of trithiocyanuric acid (TTCA) with oxiranes, propylene oxide (PO), and epichlorohydrin in a DMSO solution was monitored by the acid number and epoxy number The involvement of one of the tautomers of TTCA was postulated on the basis of the studied reaction between TTCA and 3 equiv of oxirane. It was also evidenced that the use of a catalyst was necessary for the reaction between TTCA and an excess of PO.
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2005:1305331 CAPLUS
DN 145:230930
TI Polyetherols with a purine ring
AU Lubczak, Jacek
CS Wydz. Chem., Politech. Rzeszowska, Rzeszow, 35-959, Pol.
SO Polimery (Warsaw, Poland) (2005), 50(11/12), 805-811
CODEN: POLIA4; ISSN: 0032-2725
PB Instytut Chemii Przemyslowej
DT Journal
LA Polish
AB A new single-stage method of preparation of polyetherols with purine ring in the reaction of ethylene carbonate (WE) with uric acid (KM) has been developed. Use of carbonate, which is non-flammable and non-toxic (in contrast to oxiranes used up to now), and preparation of a polyetherol with significantly better thermal stability are the main advantages of this method. The effects of the synthesis conditions [i.e., initial KM:WE molar ratio, type and amount of the catalyst used (KOH, $K_2CO_3$, DABCO), and temperature] on the reaction time and selected phys. properties of the products were investigated. The properties (surface tension, refraction index, viscosity and d.) were presented in the form of equations describing their temperature dependence in the range 20-80°C. Their values at temperature 20°C are also presented. Thermal stability of polyetherols was determined using thermal anal. method. The course of the synthesis was investigated using 1H NMR and IR spectroscopic methods, as well as chromatog. anal. of the byproducts (glycols, namely ethylene glycol, diethylene glycol, triethylene glycol, and tetraethylene glycol). The obtained polymers are of interest with respect ot the preparation of polyurethane foams.

L4 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2005:619611 CAPLUS
DN 144:254523
TI Synthesis of polyetherols with purine ring. Kinetics and mechanisms of reactions, Part 2: Reactions in the presence of triethylamine
AU Cisek-Cicirko, Irmina; Lubczak, Jacek

CS Faculty of Chemistry, Rzeszow University of Technology, Rzeszow, 35-959, Pol.
SO International Journal of Chemical Kinetics (2005), 37(8), 472-482
CODEN: IJCKBO; ISSN: 0538-8066
PB John Wiley & Sons, Inc.
DT Journal
LA English
AB The kinetics and mechanism of reaction between hydroxymethyl derivs. of uric acid and oxiranes in the presence of triethylamine as catalyst was studied. The formation of polyetherols was inhibited in initial steps of the reaction. Two different mechanisms were established for the reactions in which intermediates contained O-hydroxymethyl and O-(2-hydroxyethyl) groups.
RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2005:619610 CAPLUS
DN 144:254435
TI Synthesis of polyetherols with purine ring. Kinetics and mechanisms of reactions, Part 1: Reaction of hydroxymethyl derivatives of uric acid with oxiranes
AU Cisek-Cicirko, Irmina; Lubczak, Jacek
CS Faculty of Chemistry, University of Technology, Rzeszow, 35-959, Pol.
SO International Journal of Chemical Kinetics (2005), 37(8), 464-471
CODEN: IJCKBO; ISSN: 0538-8066
PB John Wiley & Sons, Inc.
DT Journal
LA English
AB The kinetics and mechanisms of the initial steps of formation of polyetherols from hydroxymethyl derivs. of uric acid and oxiranes were studied. It has been found that initial steps of the reaction of polyetherol formation occur without a catalyst. The NH groups which are formed upon release of formaldehyde from N- and O-hydroxymethyl derivs. of uric acid take part in the reaction.
RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2004:349617 CAPLUS
DN 140:361490
TI Procedure for the production of a ceramic foam for filters and catalysts
IN Falke, Peter; Rotermund, Udo; Hempel, Renate; Vieth, Siegfried
PA BASF A.-G., Germany
SO Ger. Offen., 14 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | DE 10248307 | A1 | 20040429 | DE 2002-10248307 | 20021016 |
| PRAI | DE 2002-10248307 | | 20021016 | | |

AB Invention concerns procedures for production ceramic (especially a mix. of alumina with aluminum phosphate) foams by conversion of organic and/or modified organic polyisocyanates (A) with polyetherol mixture (B) and optionally further opposite isocyanates reactive hydrogen atoms containing compds. (C) in presence of water and/or other propellants (D), catalysts (E) and further auxiliary and additives (F), followed by drying and firing. The polyetherol mixture (B) contains at least difunctional polyetherol (b1) with OH number 20 to 150 mg KOH/g on basis of propylene oxide, Bu oxide, and/or ethylene oxide, whereby the ethylene oxide portion is ≥40 weight%. Further the invention concerns the

method for manufacturing ceramic foams as well as their use as filtering medium,
catalyst substrate, and for reactor built-in components.

L4 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2002:624096 CAPLUS
DN 137:325368
TI Reactions of adenine with ethylene oxide and propylene oxide
AU Lubczak, Renata
CS Faculty of Chemistry, Rzeszow University of Technology, Rzeszow, 35-959, Pol.
SO Journal of Applied Polymer Science (2002), 86(2), 489-497
CODEN: JAPNAB; ISSN: 0021-8995
PB John Wiley & Sons, Inc.
DT Journal
LA English
OS CASREACT 137:325368
AB Reactions leading to thermostable polyetherols containing purine rings were studied. Products of reaction of adenine and an excess of the oxiranes were analyzed by proton NMR and IR spectroscopies. The phys. properties of some of the products were determined
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1998:449483 CAPLUS
DN 129:189914
TI Addition of oxiranes to hydroxymethyl derivatives of melamine. Part VI. Preparation of s-triazine ring-containing hydroxy-containing polyethers by the reaction of N,N,N',N',N''-pentakis(hydroxymethyl)melamine with propylene oxide in aqueous solutions
AU Lubczak, Jacek; Bukowski, Wiktor; Nicpon, Dorota
CS Politechnika Rzeszowska, Wydzial Chem., Rzeszow, 35-959, Pol.
SO Polimery (Warsaw) (1998), 43(6), 358-364
CODEN: POLIA4; ISSN: 0032-2725
PB Instytut Chemii Przemyslowej
DT Journal
LA Polish
AB Propylene oxide (PO) was added to N,N,N',N',N''-pentakis(hydroxymethyl)melamine (PHMM) over triethylamine catalyst . Disadvantageous side reactions of PO with water yield 1,2-propanediol and consecutive addition products, e.g.,4-oxaheptane-2,6-diol, 2-methyl-3-oxahexane-1,5-diol, and 5-methyl-4,7-dioxadecane-2,9-diol, as well as formaldehyde that dissociated from N-hydroxymethyl groups; partial condensation of hydroxymethyl and amine groups was also observed Classical anal. (gravimetry, determination of CH2O) and instrumental methods (1H-NMR, GC) were used to determine the functional groups in the reaction products and the percentage of byproducts. Under suitably selected reaction conditions (pressure reactor, 50°C, 11 h, 400 cc H2O/mol PHMM, PO:PHMM molar ratio 15:1), the content of byproducts was reduced from 50 to 20% of the final product weight The s-triazine polyetherol thus synthesized lent itself to prepare polyurethane foams endowed with thermal resistance as good as that of the PUR foams obtained form s-triazine polyetherols prepared by other well-known methods.

L4 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1978:153508 CAPLUS
DN 88:153508
TI Polyisocyanurate foams
IN Falkenstein, Georg; Fahrbach, Gerhard; Wulff, Harald
PA BASF Wyandotte Corp., USA
SO U.S., 8 pp.
CODEN: USXXAM
DT Patent

LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | US 4066580 | A | 19780103 | US 1976-693502 | 19760607 |
| PRAI | US 1976-693502 | A | 19760607 | | |

AB Polyurethane-polyisocyanurate foams were prepared with good controllable cream and rise times using catalyst comprising a 1,3,5-tris(N,N-dialkylaminoalkyl)-s-hexahydrotriazine and organic acid or monoester of a polycarboxylic acid. Thus, a polyurethane [58228-06-1] prepared from diisocyanatodiphenylmethane, polyphenylene polymethylene isocyanate, and polyetherol based on ethylene oxide-propylene oxide-trimethylolpropane in the presence of 1,3,5-tris(N,N-dimethylaminopropyl)hexahydro-s-triazine [15875-13-5] and BzOH [65-85-0] had cream time of 90° and a rise time of 255 s, vs. 280 s and no rise for a similar composition containing no BzOH.

=> s polyether alcohols
84364 POLYETHER
173790 ALCOHOLS
L5 72 POLYETHER ALCOHOLS
(POLYETHER(W)ALCOHOLS)

=> s l5 and catalyst
767396 CATALYST
L6 28 L5 AND CATALYST

=> d 1-28 bib abs

L6 ANSWER 1 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2006:29426 CAPLUS
DN 144:129434
TI Method for producing polyether alcohols
IN Ostrowski, Thomas; Bauer, Stephan; Loeffler, Achim; Winkler, Juergen
PA Basf Aktiengesellschaft, Germany
SO PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 2006002807 | A1 | 20060112 | WO 2005-EP6717 | 20050622 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| | DE 102004031836 | A1 | 20060119 | DE 2004-102004031836 | 20040630 |
| | EP 1763550 | A1 | 20070321 | EP 2005-753769 | 20050622 |
| | R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR | | | | |
| | CN 1976975 | A | 20070606 | CN 2005-80022158 | 20050622 |
| PRAI | DE 2004-102004031836 | A | 20040630 | | |
| | WO 2005-EP6717 | W | 20050622 | | |

AB The invention relates to a method for the continuous production of polyether

alcs. by the attachment of alkylene oxides to H-functional starter substances using a DMC catalyst. Said method comprises the following steps: (a) production of an intermediate product by the continuous metering of an H-functional starter substance, an alkylene oxide or a mixture of at least two alkylene oxides and the required quantity of a DMC catalyst in a continuous reactor; (b) continuous withdrawal of the intermediate product of step (a) from the reactor; (c) continuous metering of the product obtained in step (a), of an alkylene oxide that differs from the product in step (a), or a mixture of at least two alkylene oxides that differs from the mixture in step (a) and optionally the required quantity of a DMC catalyst in an addnl. continuous reactor.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2005:1042310 CAPLUS
DN 143:326802
TI Production of polyether alcohols by ring-opening polymerization of alkylene oxides in presence of double metal cyanides and antioxidants
IN Ruppel, Raimund; Baum, Eva; Ostrowski, Thomas; Harre, Kathrin; Bleuel, Elke
PA BASF Aktiengesellschaft, Germany
SO PCT Int. Appl., 25 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 2005090440 | A1 | 20050929 | WO 2005-EP2848 | 20050317 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| | DE 102004013408 | A1 | 20051006 | DE 2004-102004013408 | 20040318 |
| | EP 1727851 | A1 | 20061206 | EP 2005-716153 | 20050317 |
| | R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR | | | | |
| | CN 1934163 | A | 20070321 | CN 2005-80008592 | 20050317 |
| PRAI | DE 2004-102004013408 | A | 20040318 | | |
| | WO 2005-EP2848 | W | 20050317 | | |

AB A method for production of polyether alcs. by reacting alkylene oxides with at least one saturated OH-containing compound, which has been optionally already reacted with an alkylene oxide, in the presence of a double metal cyanide (DMC) catalyst and an antioxidizing agent added before or during the reaction is described. Thus, 3200 g of glycerol propoxylate with average mol. weight of 1000 were mixed in reactor with 11 g of 5.53 % solution of zinc hexacyanocobaltate (double metal cyanide catalyst) and heated to 120° under vacuum so the mixture water content became < 0.02 % ; 10 g of 2,6-di-tert-butyl-4-methylphenol (antioxidant) were added, followed by 400 g of propylene oxide bubbled through reaction mixture till pressure drop was observed(reaction start was marked 3 min after addition of ani oxidant), after that 16450 g of mixture comprising 14910 g of propylene oxide and 1940 g of ethylene oxide were reacted during 2.5 h. period. The obtained polyether polyol had hydroxyl number of 48.2 mg KOH/mg, acidic number of 0.027 mg KOH/g, water content of 0.009%, viscosity (25°) of 543 mPas, d.

of 1.101 and mol. weight of 3844. The polyether polyols can be used for producing polyurethanes by reaction with isocyanates or polyisocyanates.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2005:431473 CAPLUS
DN 142:464180
TI Preparation of polyether alcohols
IN Ostrowski, Thomas; Ruppel, Raimund; Baum, Eva; Harre, Kathrin
PA Germany
SO U.S. Pat. Appl. Publ., 7 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | US 2005107643 | A1 | 20050519 | US 2003-712707 | 20031113 |
| | WO 2005047365 | A1 | 20050526 | WO 2004-EP12598 | 20041106 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| | EP 1685179 | A1 | 20060802 | EP 2004-797695 | 20041106 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS | | | | |
| | CN 1882634 | A | 20061220 | CN 2004-80033496 | 20041106 |
| | JP 2007510785 | T | 20070426 | JP 2006-538760 | 20041106 |
| | US 2007129577 | A1 | 20070607 | US 2006-578874 | 20060511 |
| PRAI | US 2003-712707 | A | 20031113 | | |
| | WO 2004-EP12598 | W | 20041106 | | |

AB A process is described for the continuous preparation of polyether alcs. by reaction of alkylene oxides with H-functional starter substances in the presence of double metal cyanide (DMC) catalysts which comprises at the beginning of the process: (A) firstly placing initial charge material (e.g., dipropylene glycol) and DMC catalyst in a reactor, (B) metering in alkylene oxide so that the metering rate which is maintained for continuous operation of the reactor is reached in a time of 100-3000 s; (C) metering in starter substance during or after step (B) so that the metering rate which is maintained for continuous operation of the reactor is reached in a time of from 5-500 s; and (D) after the fill level in the reactor which is desired for continuous operation of the reactor has been reached, taking product off continuously from the reactor while at the same time metering in starter substance and alkylene oxides in such an amount that the fill level in the reactor remains constant and metering in DMC catalyst so that the catalyst concentration necessary for continuous operation of the reactor is maintained in the reactor.

L6 ANSWER 4 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2004:268218 CAPLUS
DN 140:287875
TI Procedure for the production of polyether alcohols.
PA BASF A.-G., Germany
SO Ger. Offen., 12 pp.
CODEN: GWXXBX
DT Patent

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LA   German
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ---------------     ----   --------    --------------------   --------
PI   DE 10244283          A1    20040401    DE 2002-10244283       20020923
     WO 2004029131        A1    20040408    WO 2003-EP10155        20030912
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
             PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,
             TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
             KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
             FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
     AU 2003273863        A1    20040419    AU 2003-273863         20030912
PRAI DE 2002-10244283     A     20020923
     WO 2003-EP10155      W     20030912
```
AB   Polyether polyols are manufactured by catalytic polymerization of alkylene oxides (e. g., a mixture of propylene oxide and ethylene oxide) with multi-metal cyanide complex as a catalyst (e. g. Zn hexacyanocobaltate), thereby the free alkylene oxide content in reactor is sustained at ≤ 8%. Polyether polyols are useful in polyurethane foam manufacturing and as starters (e. g. propoxylated mixture of glycerol and monoethylene glycol) in catalytic polymerization of alkylene oxides.

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L6   ANSWER 5 OF 28  CAPLUS  COPYRIGHT 2007 ACS on STN
AN   2003:1007042  CAPLUS
DN   140:42706
TI   Sodium hydroxide as catalyst in two-step procedure for the
     manufacture of polyether alcohols
IN   Ruppel, Raimund; Baum, Eva; Winkler, Juergen; Bohres, Edward
PA   BASF Aktiengesellschaft, Germany
SO   PCT Int. Appl., 19 pp.
     CODEN: PIXXD2
DT   Patent
LA   German
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ---------------     ----   --------    --------------------   --------
PI   WO 2003106534        A1    20031224    WO 2003-EP5936         20030606
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
             PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT,
             TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
             KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
             FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
     DE 10226415          A1    20031224    DE 2002-10226415       20020613
     AU 2003276911        A1    20031231    AU 2003-276911         20030606
     EP 1516007           A1    20050323    EP 2003-740194         20030606
     EP 1516007           B1    20051116
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
     US 2005177005        A1    20050811    US 2003-515350         20030606
     CN 1659210           A     20050824    CN 2003-813630         20030606
     AT 310040            T     20051215    AT 2003-740194         20030606
PRAI DE 2002-10226415     A     20020613
     WO 2003-EP5936       W     20030606
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AB The polyether alcs. useful for the production of polyurethanes are manufactured by
(a) reacting a low-mol.-wt alc. with alkylene oxide in the presence of a basic catalyst, specifically NaOH, in order to form an alkylene oxide addition product having a mol. weight 200-900 g/mol, (b) separating the basic catalyst from the product obtained in step (a) and (c) reacting the product obtained in step (b) with another alkylene oxide in order to produce the desired final product while using ≥1 DMC catalyst. Thus, heating 2730 g glycerol with 45 g solid NaOH at 120°, removing H2O by distillation at 40 mbar, adding 630 g HOCH2CH2OH followed by 16,670 g propylene oxide over 5 h, washing the product with aqueous H3PO4 and removing H2O by distillation at 15 mbar gave an intermediate colorless product having OH number 306 mg KOH/g, acid number 0.102 mg KOH/g, H2O content 0.077%, viscosity 215 mPa·s (25°) and alkalinity 6.1 ppm K. This (3200 g) was mixed with 100 ppm (based on the intermediate product) of a previous art DMC, heated to 120° and 40 mbar to reduce H2O content to 0.02%, treated with 400 g propylene oxide (PO) to start the reaction and then with a mixture of 14,910 g PO and 1940 g ethylene oxide over 2.5 h to give colorless polyether alc. having OH number 49.4 mg KOH/g, acid number 0.033 mg KOH/g, H2O content 0.011%, viscosity (25°) 543 mPa·s and Mw 3025 g/mol.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 6 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2003:396948 CAPLUS
DN 138:402404
TI Manufacture of polyether alcohols by alkoxylation of H-functional precursors with amines as catalysts
IN Guettes, Bernd; Harre, Kathrin; Knorr, Gottfried; Schuster, Marita; Wetterling, Monika
PA BASF Aktiengesellschaft, Germany
SO PCT Int. Appl., 22 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 2003042281 | A1 | 20030522 | WO 2002-EP12493 | 20021108 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| | DE 10156014 | A1 | 20030605 | DE 2001-10156014 | 20011115 |
| | AU 2002356572 | A1 | 20030526 | AU 2002-356572 | 20021108 |
| | EP 1448665 | A1 | 20040825 | EP 2002-802999 | 20021108 |

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| | US 2005004403 | A1 | 20050106 | US 2004-495199 | 20040511 |
| PRAI | DE 2001-10156014 | A | 20011115 | | |
| | WO 2002-EP12493 | W | 20021108 | | |

AB In the title process, the amines are added to the reaction mixture before or at the beginning of alkoxylation reaction, and also ≥1 more time over the reaction course. The catalysts are added at the point of reaction, at which an intense sequence of secondary reactions occurs,

and/or when changing the alkylene oxide as reactant. The amines remain in the resulting polyols and serve as catalysts when the polyols are used for the manufacture of polyurethanes. For example, reacting 100 g ethylene oxide with a mixture of diethylene glycol 71, sucrose 162 and N,N-dimethylcyclohexylamine (DCA) 2 g at 110°, adding 5 g DCA, introducing 300 g propylene oxide and propoxylating the mixture at 120° gave a polyol having OH number 441 mg KOH/g, viscosity 5870 mPa·s (25°) and pH 10.1. A soft polyurethane foam with d. 29 g/L was manufactured from 125 parts crude MDI and a polyol component comprising 54 parts of the latter polyol, 4.2 parts glycerol, 21.1 part propoxylated ethylene glycol, 1 part Tegostab B 8409, 1.8 parts DCA, 2.4 parts H2O and 15.5 parts cyclopentane.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 7 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2003:396947 CAPLUS
DN 138:385947
TI Manufacture of polyether alcohols by alkoxylation of H-functional precursors with microporous double metal cyanide catalysts
IN Bohres, Edward; Mueller, Ulrich; Ruppel, Raimund; Baum, Eva
PA BASF Aktiengesellschaft, Germany
SO PCT Int. Appl., 27 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 2003042280 | A1 | 20030522 | WO 2002-EP12492 | 20021108 |
| | WO 2003042280 | A8 | 20041014 | | |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| | DE 10156117 | A1 | 20030528 | DE 2001-10156117 | 20011115 |
| | AU 2002356571 | A1 | 20030526 | AU 2002-356571 | 20021108 |
| | EP 1448664 | A1 | 20040825 | EP 2002-802998 | 20021108 |

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| | JP 2005509070 | T | 20050407 | JP 2003-544112 | 20021108 |
| | US 2004249221 | A1 | 20041209 | US 2004-493608 | 20040423 |
| PRAI | DE 2001-10156117 | A | 20011115 | | |
| | WO 2002-EP12492 | W | 20021108 | | |

AB Polyether alcs., useful for the manufacture of (cellular) polyurethanes, were manufactured by alkoxylation of H-functional precursors in the presence of porous double metal cyanide catalysts having surface area >100 m2/g, preferably >450 m2/g. The catalyst have high activity with short induction period. For example, ethoxylation-propoxylation of ethoxylated glycerol (OH number 152 mg KOH/g) at 120° in the presence of 100 ppm of double metal cyanide catalyst containing 25.6% Co and 11.9% Zn, having surface area 375 m2/g (preparation given), gave polyether polyol with OH number 47.1 mg KOH/g and viscosity 599 mPa·s. The catalyst activation time was 7 min.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 8 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN

```
AN    2003:282637  CAPLUS
DN    138:304719
TI    Manufacture of polyether alcohols with double metal
      cyanide catalysts in presence of polymerization moderators
IN    Luinstra, Gerrit; Heinemann, Johannes; Treuling, Ulrich
PA    Basf Aktiengesellschaft, Germany
SO    PCT Int. Appl., 24 pp.
      CODEN: PIXXD2
DT    Patent
LA    German
FAN.CNT 1
      PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
      ---------------     ----   --------    --------------------    --------
PI    WO 2003029326        A1    20030410    WO 2002-EP10407         20020917
          W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
             KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
             FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF,
             CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
      DE 10147711          A1    20030410    DE 2001-10147711        20010927
      AU 2002338713        A1    20030414    AU 2002-338713          20020917
PRAI DE 2001-10147711      A     20010927
      WO 2002-EP10407      W     20020917
AB    The polyether alcs., useful or the manufacture of thermoplastic polyurethanes
      and polyurethane foams, surfactants, lubricants, etc., were manufactured from
      oxiranes in the presence of ≥1 multimetal cyanide  catalyst
      and a moderator gas selected from CO2, CO, H and/or N2O at pressures of
      ≥1 bar.  For example, polyoxypropylene with mol. weight Mw = 4210 and
      Mw/Mn = 2.4 was manufactured by heating 20 mg double metal cyanide
      catalyst [preparation from H3[Co(CN)6], Zn(OAc)2 and Pluronic PE 6200
      given] for 4 h at 80-130° in an autoclave, cooling to ambient
      temperature, adding 2.25 mL PhMe and 0.75 mL propylene oxide, pressurizing the
      reactor with 2 bar CO2 and heating the content for 3 h at 80°.  The
      polymerization proceeded without sudden temperature or pressure increase.
RE.CNT  2      THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
               ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6    ANSWER 9 OF 28  CAPLUS  COPYRIGHT 2007 ACS on STN
AN    2001:396953  CAPLUS
DN    134:367381
TI    Method for working up polyether alcohols to recover
      the catalyst
IN    Harre, Kathrin; Hoeppner, Gerd; Grosch, Georg Heinrich; Heider, Wolfgang;
      Baum, Eva; Ostrowski, Thomas
PA    BASF Aktiengesellschaft, Germany
SO    PCT Int. Appl., 17 pp.
      CODEN: PIXXD2
DT    Patent
LA    German
FAN.CNT 1
      PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
      ---------------     ----   --------    --------------------    --------
PI    WO 2001038421        A1    20010531    WO 2000-EP11342         20001116
          W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
             HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
             LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
             SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
             YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

DE 19957105 A1 20010531 DE 1999-19957105 19991126
EP 1237985 A1 20020911 EP 2000-979572 20001116
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PRAI DE 1999-19957105 A 19991126
WO 2000-EP11342 W 20001116

AB The catalyst is separated from polyether alcs. produced by catalytic addition of alkylene oxides to active H-containing starting materials using ≥1 multi-metal cyanide compound as catalyst by sedimentation, especially centrifugation, after completion of addition of the alkylene oxide, which permits reuse of the crystalline monoclinic catalyst without any chemical alteration or decrease in its activity. The catalyst is obtained by reaction of a metal salt with a hexacyano metallic acid in the presence of a surfactant. Thus, to 400 g (1 mol) polypropylene glycol 8.4 g of the freshly prepared catalyst (zinc hexacyanocobaltate) was added, mixed under N and treated for 1 h at 140° under vacuum. Then, 1 mol ethylene oxide was added to start the reaction, followed by 440 g ethylene oxide over 35 min at ≤4.4 bars. The polyol obtained after distillation at 0.1 bar at 110°, was filtered at 70° and 3 bars and decanted after centrifuging (8000 rpm). The Zn/Co content found in the polyether alcs. was 5/3 ppm.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 10 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2001:284024 CAPLUS
DN 134:311581
TI Method for producing polyether alcohols
IN Baum, Eva; Grosch, Georg Heinrich; Harre, Kathrin; Winkler, Juergen; Ostrowski, Thomas; Hoeppner, Gerd; Paredis, Els
PA Basf Aktiengesellschaft, Germany
SO PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 2001027186 | A1 | 20010419 | WO 2000-EP9629 | 20001002 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
YU, ZA, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

DE 19949092 A1 20010419 DE 1999-19949092 19991012
CA 2387155 A1 20010419 CA 2000-2387155 20001002
BR 2000014701 A 20020618 BR 2000-14701 20001002
EP 1233996 A1 20020828 EP 2000-966099 20001002
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL
HU 200203083 A2 20021228 HU 2002-3083 20001002
JP 2003511533 T 20030325 JP 2001-530400 20001002

PRAI DE 1999-19949092 A 19991012
WO 2000-EP9629 W 20001002

AB Polyether alcs. produced from OH-functional starter compds. and alkylene oxides can be obtained in the presence of smaller amts. of multi-metal cyanide catalysts if the OH-functional starter compound and alkylene oxide

are pre-purified by contacting with adsorbents, e.g., ion exchangers, layered silicates, aluminosilicates or zeolite. The total content of alkaline and acidic impurities contained in the starting material and the alkylene oxides, which reduce the activity of the catalyst, is reduced to <100 ppm. For example, 3000 g polypropylene glycol (PPG) (mol. weight 400 g/mol) was stirred for 5 h at ambient temperature with 2.5% Amberlite UP 252, the ion exchanger was separated, 128 g of purified PPG and 50 ppm $Zn_3[Co(CN)_6]_2$ were placed in an autoclave and treated with 72 g propylene oxide at 130°. The propoxylation reaction started after 8 min, while the propoxylation of unpurified PPG under similar condition did not start after 4 h.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 11 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2001:207829 CAPLUS
DN 134:223195
TI Process for manufacture of block polyether alcohols for soft polyurethane foams
IN Grosch, Georg Heinrich; Larbig, Harald; Lorenz, Reinhard; Junge, Dieter; Harre, Kathrin
PA BASF A.-G., Germany
SO Ger. Offen., 10 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | DE 19944762 | A1 | 20010322 | DE 1999-19944762 | 19990917 |
| | CA 2385085 | A1 | 20010329 | CA 2000-2385085 | 20000905 |
| | WO 2001021682 | A1 | 20010329 | WO 2000-EP8640 | 20000905 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW | | | | |
| | RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| | BR 2000014055 | A | 20020521 | BR 2000-14055 | 20000905 |
| | EP 1230289 | A1 | 20020814 | EP 2000-964106 | 20000905 |
| | EP 1230289 | B1 | 20041208 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL | | | | |
| | HU 200202600 | A2 | 20021228 | HU 2002-2600 | 20000905 |
| | JP 2003510384 | T | 20030318 | JP 2001-525253 | 20000905 |
| | AT 284427 | T | 20041215 | AT 2000-964106 | 20000905 |
| | PT 1230289 | T | 20050429 | PT 2000-964106 | 20000905 |
| | ES 2233443 | T3 | 20050616 | ES 2000-964106 | 20000905 |
| | RU 2257394 | C2 | 20050727 | RU 2002-110293 | 20000905 |
| PRAI | DE 1999-19944762 | A | 19990917 | | |
| | WO 2000-EP8640 | W | 20000905 | | |

AB Polyether alcs. containing a high proportion of ethylene oxide without showing any significant increase in hydrophilicity for manufacture of soft polyurethane foams are obtained by ring-opening polymerization of ethylene oxide and ≥1 C≥3-alkylene oxide and possess ≤15 weight% ethylene oxide at the chain ends. In a first step ethylene oxide or a mixture of ≥98 weight% ethylene oxide and ≥1 C≥3-alkylene oxide (especially propylene oxide or (iso)butylene oxide) is added to an initiator forming a first block. In a second step ≥1 C≥3-alkylene oxide or a mixture of ≥1 C≥3-alkylene oxide and ≤20 weight% ethylene oxide is added to ≤40 weight% of the first block using a double metal

cyanide catalyst. Thus, from a mixture of 1115 g glycerol and 32.5 g of a 47% KOH solution the water was removed at 95-100° under vacuum in 1.5 h, before 3980 g ethylene oxide was added (at 110°, 3.5 bars N2, 6 h). Then, at 50° under N2 in vacuum 2.141 g of a catalyst from Zn(OAc)2, hexacyanocobaltic acid and tert-BuOH was added to 609.7 g of the purified polyether reacting at 125° and 1 millibar with a mixture of 107 g ethylene oxide and 4288 g propylene oxide, forming a polyether alc. with Mw 3093, OH number 47.1 mg KOH/g and 0.0066 mequiv/g unsatn. Finally, a soft polyurethane foam is manufactured by reaction of the polyether alc. with TDI.

L6 ANSWER 12 OF 28 CAPLUS 
AN 1999:576841 CAPLUS
DN 131:214774
TI Manufacture of supported double metal cyanide catalysts and their use for producing polyether alcohols
IN Grosch, Georg Heinrich; Larbig, Harald; Lorenz, Reinhard; Junge, Dieter; Kammel, Ulrich
PA Basf A.-G., Germany
SO PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 9944739 | A1 | 19990910 | WO 1999-EP1151 | 19990223 |
| | W: CA, CN, JP, KR, MX, US | | | | |
| | RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE | | | | |
| | DE 19809539 | A1 | 19990909 | DE 1998-19809539 | 19980305 |
| | EP 1060020 | A1 | 20001220 | EP 1999-937890 | 19990223 |
| | R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE, PT | | | | |
| | US 6362126 | B1 | 20020326 | US 2000-623553 | 20000909 |
| PRAI | DE 1998-19809539 | A | 19980305 | | |
| | WO 1999-EP1151 | W | 19990223 | | |

AB Double metal cyanide catalysts (DMC) M1a[M2(CN)b(A)c]d·fM1gXn.cntdo t.h(H2O)·eL (M1, M2 = selected metal ions; A, X = selected anion; L = H2O-miscible ligand; a, b, c, d, g, n selected to ensure electroneutrality of DMC; e = coordination no of the ligands; e, f, h = digits or fractions ≥0) are manufactured by combining aqueous solution of a hydrogen cyanometallate acid or a cyanometallate salt with stoichiometric excess of a metal salt M1m(X)n (M1, X, m, n as above) solution and adding organic ligands, e.g., alcs., aldehydes, ketones, amides, etc., to the resulting suspension. DMC are deposited on solid, inert nonfoamed supports, e.g., Al or Al2O3 particles, or blended with the supports or shaped into forms. The catalysts are used for producing polyether alcs. with a low unsatd. compound content by means of catalytic ring-opening polymerization of alkylene oxides. For example, passing aqueous solution of
K3[Co(CN)6]
through an acid ion exchanger, combining the eluate with aqueous solution of Zn(OAc)2·2H2O, adding Me3COH to the stirred suspension, adding aqueous solution of Zn(NO3)2·6H2O and filtering the suspension gave a solid which was resuspended in Me3COH and the suspension treated with Si(OEt)4. The resulting mixture was sprayed on AcOH-soaked, warm Selexsorb CD and dried to give a DMC catalyst which was used to produce propylene oxide polymer having viscosity 329 MPa·s (25°), OH number 57.3 mg KOH/g, and containing 0.0073 meq/g unsatd. compds.
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 13 OF 28 CAPLUS 
AN 1998:608386 CAPLUS
DN 129:231154

TI Preparation of double metal cyanide catalysts and preparation of polyether alcohols
IN Grosch, Georg Heinrich; Larbig, Harald; Junge, Dieter; Geelen, Daniella; De Vocht, Peter; Hoeppner, Gerd
PA BASF A.-G., Germany
SO Eur. Pat. Appl., 9 pp.
CODEN: EPXXDW
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | EP 862947 | A1 | 19980909 | EP 1998-102671 | 19980217 |
| | EP 862947 | B1 | 20030423 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| | DE 19709031 | A1 | 19980910 | DE 1997-19709031 | 19970306 |
| | ES 2198610 | T3 | 20040201 | ES 1998-102671 | 19980217 |
| | JP 10277398 | A | 19981020 | JP 1998-48056 | 19980227 |
| | CA 2228651 | A1 | 19980906 | CA 1998-2228651 | 19980305 |
| | US 6303533 | B1 | 20011016 | US 1998-35601 | 19980305 |
| PRAI | DE 1997-19709031 | A | 19970306 | | |

AB The catalysts, used for polymerization of alkylene oxides, are prepared by mixing 2 aqueous solns., one of which contains a halide, hydroxide, sulfate, carbonate, cyanate, thiocyanate, isocyanate, carboxylate, oxalate, or nitrate of Zn, Fe, Co, Ni, Mn, Sn, Pb, Mo, Al, V, Sr, W, or Cr and the other of which contains HaM(CN)bXc [M = Fe, Co, Mn, Rh, Ru, V, Cr; X = halide, hydroxide, sulfate, carbonate, cyanide, cyanate, thiocyanate, isocyanate, carboxylate, oxalate, nitrate; a-c = integer], one or both of them also optionally containing (an)other water-miscible organic ligand(s). Thus, a solution of 17.8 g K hexacyanocobaltate in 100 mL H2O was passed through a strongly acidic ion exchanger and the eluate was heated to 40°, mixed with a solution of 20.0 g Zn(OAc)2 in 100 mL H2O, stirred 10 min, treated with 84 g MeOCH2CH2OMe, and stirred an addnl. 30 min at 40° to give a suspension, from which the crystalline catalyst (containing <10 ppm K) was separated This catalyst was used to polymerize propylene oxide onto an oligopropylene glycol (OH number 280 mg KOH/g) to give a polyether diol with OH number 57.3 mg KOH/g, containing <5 ppm Zn and <5 ppm Co.
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 14 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1997:61161 CAPLUS
DN 126:89936
TI Manufacture of catalytically active polyether alcohols
IN Guettes, Bernd; Falke, Peter; Rotermund, Inge; Knorr, Gottfried; Dinsch, Stefan
PA BASF A.-G., Germany
SO Ger. Offen., 6 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | DE 19519680 | A1 | 19961205 | DE 1995-19519680 | 19950530 |
| PRAI | DE 1995-19519680 | | 19950530 | | |

AB The title compound are manufactured by base-catalyzed polymerization of alkylene oxides in presence of H-active starter compds. The reaction is carried out with gradual addition of base catalysts and (in)organic alkali or alkaline earth metal

salts. The catalysts are removed by a sep. step comprising addition of (in)organic acids, formation of salts crystals and their removal, e.g., by centrifugation. The use of polyether alcs. as catalytically active components for the manufacture of polyurethanes is also claimed. For example, a mixture of 395 g glycerol and 5.4 g KOH (45%) was homogenized at 120° and subjected to vacuum distillation to reduce H2O content to <0.1%, propylene oxide (1405 g) was introduced at 120°, the resulting product was treated with 16.1 g K2HPO4, homogenized, treated with 2% H2O (based on total charge) and then with H3PO4 to neutralization degree of 0.9. Suspended salts were removed by centrifugation and H2O removed in vacuo to give a clear title polyol with OH number 407 mg KOH/g, viscosity (25°) 371 mPa·s, H2O content 0.04%, and K content 1742 ppm.

L6 ANSWER 15 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1995:842442 CAPLUS
DN 123:231955
TI Removal of catalyst residues from polyether alcohols
IN Vickler, Jozef; Guettes, Bernd; Dinsch, Stefan; Steinchen, Karl-Heinz
PA BASF Schwarzheide GmbH, Germany
SO Ger. Offen., 4 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | DE 4336923 | A1 | 19950504 | DE 1993-4336923 | 19931029 |
| PRAI | DE 1993-4336923 | | 19931029 | | |

AB Catalyst residues remaining in polyether alcs. manufactured by base-catalyzed addition reaction of alkylene oxides with H-active starting compds. are removed by neutralization with CO2 and separation of the resulting salts. In the title process, polyether alcs. are treated with CO2 up to the saturation point, the salts are separated by filtration, and the separation step repeated, optionally in the presence of Mg Al silicate.

L6 ANSWER 16 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1991:101340 CAPLUS
DN 114:101340
TI The method for selectivity control in oxidation of polyether alcohols to polyether carboxylic acids
IN Abendroth, Peter; Goebel, Joerg; Koch, Bernd; Czichocki, Gunther; Gerhardt, Werner; Martens, Christiane
PA VEB Chemische Werk, Ger. Dem. Rep.
SO Ger. (East), 4 pp.
CODEN: GEXXA8
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | DD 277272 | A1 | 19900328 | DD 1988-322011 | 19881121 |
| PRAI | DD 1988-322011 | | 19881121 | | |

OS MARPAT 114:101340
AB The title method comprises Pt- or Pd-catalyzed oxidation of polyether alcs. by O or O-containing gases in aqueous solns. in the presence of alkoxylated (alkyl)phenols R1R2C6H3O(MeCHCH2O)x(CH2CH2O)y (R1, R2 = H, C1-13 alkyl; x = 0-30; y = 1-100) as the oxidation selectivity regulators which prevent cleavage of the substrate ether bonds and have no adverse effect to the quality, e.g., its color, by their presence in the product. Thus, to an aqueous solution of RO(CH2CH2O)10H (R = C16-18 alkyl) buffered by NaOH and NaHCO3 and containing Pd on C as a catalyst, was added 3 weight% PhOCH2CH2OH

(I) and the whole was treated by O in a tubular reactor at 80° to give 98% title carboxylic acids having an iodine color index number 0 vs. 94% yield and the color index number 80 in the absence of I.

L6 ANSWER 17 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1984:192571 CAPLUS
DN 100:192571
TI Living polyether alcohols
IN Behrendt, Gerhard; Schimpfle, Hans U.; Wagner, Guenter
PA Akademie der Wissenschaften der DDR, Ger. Dem. Rep.
SO Ger. (East), 9 pp.
CODEN: GEXXA8
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | DD 203734 | A1 | 19831102 | DD 1981-236230 | 19811224 |
| PRAI | DD 1981-236230 | | 19811224 | | |

AB Polyether polyols, useful in polyurethane production, are prepared by the reaction of oxiranes with coordination metal catalysts, e.g. double metal cyanide complexes, and adding oxiranes to these living starters at 40-120°. Thus, stirring 200 g propylene oxide (I) and 6 g $Zn_3[Fe(CN)_6]_2$-THF complex with self-heating to 80° (26.5 min), adding 400 g dipropylene glycol and 300 g I over 25 min at 80-100° and then 100 g I over 10 min, and stirring 1 h gave a starter having mol. weight 335 and functionality 2. Mixing 33.5 g this starter, immediately or after 1 mo, with 175 g I over 2.5 h at 80° gave polypropylene glycol [25322-69-4] having mol. weight 2000.

L6 ANSWER 18 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1983:471324 CAPLUS
DN 99:71324
TI Continuous production of polyether alcohols
IN Habicher, Wolf Dieter; Anders, Peter; Henning, Alfred; Deutschmann, Klaus; Trost, Wolf; Krushatin, A. V.; Gladkovskii, G. A.; Shtykh, V. S.; Reusov, A. V.; et al.
PA VEB Synthesewerk Schwarzheide, Ger. Dem. Rep.; All-Union Scientific-Research Institute of Synthetic Resins
SO Ger. (East), 16 pp.
CODEN: GEXXA8
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | DD 159262 | A3 | 19830302 | DD 1980-225535 | 19801128 |
| PRAI | DD 1980-225535 | | 19801128 | | |

AB Polyether polyols of uniform functionality and mol. weight are prepared by a continuous process in which the starter alc. and an alkali catalyst are quasihomogeneously mixed with the alkylene oxide(s) before being fed into the working reactor by spraying the alc.-catalyst mixture against the alkylene oxide stream at 1:(2-8) ratio of nozzle diameter to amount of material to be sprayed. Thus, 0.95 kg/h K monoglycerate (60-80°) and 29 kg/h propylene oxide (I) (20-30°) were fed to a mixer using nozzle dimensions 0.5 and 2.2 mm, resp. The mixing was homogeneous and reaction began without an induction period. The reaction mixture was passed through a coil reactor to give a polyether polyol [25791-96-2] with average mol. weight 3250, iodine number 1.6 g I/100 g, monool content 4%, diol content 7%, unreacted I .apprx.0.5%, and alkalinity 0.32-0.34%.

L6 ANSWER 19 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1982:528182 CAPLUS
DN 97:128182
TI Determination of hydroxyl number of polyether alcohols by catalysis with 4-(dimethylamino)pyridine
AU Krueger, Ralph Peter; Gnauck, Roland; Algeier, Rosemarie
CS Zentralinst. Org. Chem., DAW, Berlin-Adlershof, Ger. Dem. Rep.
SO Plaste und Kautschuk (1982), 29(5), 274
CODEN: PLKAAM; ISSN: 0048-4350
DT Journal
LA German
AB 4-(Dimethylamino)pyridine [1122-58-3] Had higher activity than pyridine or N-methylimidazole as an acetylation catalyst in the determination of the OH number of polyether polyols and gave good results with polyols containing secondary OH groups.

L6 ANSWER 20 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1982:53198 CAPLUS
DN 96:53198
TI High-molecular-weight polyether alcohols
IN Behrendt, Gerhard; Schimpfle, Hans Ulrich; Wagner, Guenter; Becker, Hans
PA Akademie der Wissenschaften der DDR, Ger. Dem. Rep.
SO Ger. (East), 13 pp.
CODEN: GEXXA8
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | DD 148957 | A1 | 19810617 | DD 1980-218778 | 19800131 |
| PRAI | DD 1980-218778 | A1 | 19800131 | | |

AB High-mol.-weight alkylene oxide polymers, copolymers, and block copolymers with regular structure and narrow mol. weight distribution, suitable for manufacture of polyurethane elastomers, are prepared in the presence of a catalyst consisting of a metal salt of hexacyanoiridium(III) acid (I). Thus, 7 g I in 100 mL water and 30 mL MeO(CH2)2OMe was treated with 5.5 g ZnCl2 in 16 mL water. The resulting precipitate was suspended in 90 mL water and 70 mL MeO(CH2)2OMe, stirred, separated twice, and dried to give 95% Zn hexacyanoiridate(III) (II). Dipropylene glycol 140, propylene oxide (III) 140, and II 1 g were mixed at 40°, allowed to stand as the temperature peaked at 120° and dropped to 70°, and then treated with an addnl. 1860 g III at a rate such the temperature did not go over 80°, giving a 100% yield of dipropylene glycol polypropylene glycol ether [80408-02-2] with OH number 54.3, iodine 0.12, number-average mol. weight 1938, and mol. weight range 1600-3400, compared with values of 54.7, 0.21, 1901, and 1500-18,000, resp., for a control prepared with Zn hexacyanocobaltate catalyst.

L6 ANSWER 21 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1980:77143 CAPLUS
DN 92:77143
TI Chlorine-containing polyether alcohols
IN Jedlinski, Zbigniew; Frommelt, Horst; Ruebner, Joachim; Stolarzewicz, Andrzej; Neumann, Gert; Pradellok, Witold
PA Polska Akademia Nauk, Zaklad Polimerow, Pol.; Akademie der Wissenschaften der DDR, Zentralinstitut fuer Organische Chemie
SO Pol., 4 pp.
CODEN: POXXA7
DT Patent
LA Polish
FAN.CNT 2

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|

PI PL 101216 B1 19781230 PL 1976-191734 19760811
DD 130419 A3 19780329 DD 1975-187788 19750811
PRAI DD 1975-187788 A 19750811
AB Hydrolysis-resistant polyether alcs. are prepared by cationic, random or block copolymn. of ethylene oxide or propylene oxide (I) with chlorophenyl glycidyl ethers in the presence of Lewis acids. Thus, 700 mL I was added to 100 mL CH2Cl2 containing 10 mL SnCl4 at 5°. The mixture was polymerized 75 min at 13-15°, cooled to 0° in 30 min, treated with 855 g o-chlorophenyl glycidyl ether (raising the temp to 5°), and mixed with 700 mL I after 20 min. The catalyst was deactivated by treatment with 20 g NaOH in 200 mL water. Removal of water by distillation and filtration gave 1535 g (78% yield) polyether [70352-79-3] with mol. weight 597, viscosity 1750 cP (25°), OH number 86, and Cl content 9.1%.

L6 ANSWER 22 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1975:428821 CAPLUS
DN 83:28821
TI Polyether alcohols by condensation of alcohols
IN Meyer, Baerbel; Mueller-Hagen, Gerd; Nitzschke, Manfred; Pudig, Hans J.; Romanowski, Helmut; Sachs, Reiner; Techritz, Klaus; Wessely, Karl H.
PA VEB Synthesewerk Schwarzheide
SO Ger. Offen., 14 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | DE 2414647 | A1 | 19750109 | DE 1974-2414647 | 19740327 |
| | DD 109883 | A1 | 19741120 | DD 1973-171923 | 19730615 |
| | SU 651012 | A1 | 19790305 | SU 1974-2032645 | 19740613 |
| PRAI | DD 1973-171923 | A2 | 19730615 | | |

AB Poly(1,3-butanediol) [55251-78-0] and poly(1,6-hexanediol) [27236-13-1] were prepared by polymerization of the diol in PhMe [108-88-3] (azeotroping agent) containing H2SO4 and NaHCO3 [144-55-8] (to suppress side reactions). Thus, 500 g 1,3-butanediol, 5 g H2SO4, and 80 ml PhMe were refluxed (144-58°) with continuous addition of NaHCO3 and water separation so that after 10 hr the catalyst was fully neutralized, giving 328 g polycondensate of OH number 350 and I number 18. Omission of PhMe or NaHCO3 resulted in lower polyether yields and purity.

L6 ANSWER 23 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1975:17477 CAPLUS
DN 82:17477
TI Poly(ether alcohols)
IN Marquardt, Renate; Guettes, Bernd; Romanowski, Helmut; Meyer, Baerbel
SO Ger. (East), 14 pp.
CODEN: GEXXA8
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | DD 106400 | A1 | 19740612 | DD 1973-172444 | 19730727 |
| PRAI | DD 1973-172444 | A1 | 19730727 | | |

AB 2-Step polymerization of amino acids with alkylene oxides in the presence of alkalies gave N-containing polyether alcohols with .apprx.5,000 mol. weight Thus, a mixture of oligocaprolactam 113 g and AcONa 15 g was heated to 120°, treated with 850 ml propylene oxide (I) (1,5 to 9 atm) for 2.5 hr to give yellow low viscous material 130 g of which was treated with 4 g KOH and 750 ml I for 3.5 hr to give 590 g yellow liquid caprolactam-propylene oxide copolymer [27307-09-1] with 49.3 and 0.1 mg KOH/g OH and acid no.resp., 2.6 g iodine/100 g iodine number, 0.3%

H2O, and 747.52 cP viscosity at 20°.

L6 ANSWER 24 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1970:478021 CAPLUS
DN 73:78021
TI Removing catalyst residues from polyether alcohols
IN Leipnitz, Walter; Weiland, Martin
SO Ger. (East), 2 pp.
CODEN: GEXXA8
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | DD 71622 | | 19700305 | DD | 19680703 |

AB Basic catalysts are removed from polyether alcs. by treating the impure alc. with water and KHSO4 or other acid salts to neutralize the basic catalyst, heating under vacuum, and filtering to remove pptd, catalysts. A polyether alc. containing KOH catalyst residue is treated with KHSO4 and water to form a neutralized emulsion which was heated to 80° under vacuum and filtered to yield a purified alc. containing <4 ppm K.

L6 ANSWER 25 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1970:436075 CAPLUS
DN 73:36075
TI Ether and polyether alcohols by alkoxylation of alcohols with alkylene oxides
IN Umbach, Wilfried; Stein, Werner
PA Henkel und Cie. G.m.b.H.
SO Ger. Offen., 22 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | DE 1800462 | A | 19700527 | DE 1968-1800462 | 19681002 |
| | DE 1800462 | B2 | 19760826 | | |
| | DE 1800462 | C3 | 19770407 | | |
| | NL 6913509 | A | 19700406 | NL 1969-13509 | 19690904 |
| | US 3651152 | A | 19720321 | US 1969-859560 | 19690919 |
| | BE 739529 | A | 19700331 | BE 1969-739529 | 19690929 |
| | FR 2019682 | A5 | 19700703 | FR 1969-33515 | 19691001 |
| | GB 1282738 | A | 19720726 | GB 1969-1282738 | 19691001 |
| PRAI | DE 1968-1800462 | A | 19681002 | | |

AB Ether and polyether alcs. were prepared from alcs., e.g. n-tetradecanol, sec-tetradecyl alc. isomers, 2-octanol, 1-octanol, tert-BuOH, and alkylene oxides, e.g. ethylene oxide (I) or butylene oxide in the presence of 0.05-2.5% carbonium ions, e.g. tropylium tetrafluoroborate (II) or Ph3C+BF4-. Thus, 214 g mixture of sec-tetradecyl alcs. was added to 0.6 g II under N and heated at 80-95°. I (88 g) was passed within 1.5 hr into the mixture The catalyst was hydrolyzed and the salts removed to give a prod. containing 25% unreacted sec-tetradecyl alcs. and 0.5% polyglycol.

L6 ANSWER 26 OF 28 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1966:491532 CAPLUS
DN 65:91532
OREF 65:17158h,17159a-c
TI Polyether alcohols, polyether acids, and salt derivatives
IN Budde, Walter M., Jr.

PA Archer-Daniels-Midland Co.
SO 5 pp.
DT Patent
LA Unavailable
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | US 3274220 | | 19660920 | US 1956-624725 | 19561128 |
| PRAI | US | | 19561128 | | |

AB Epoxy fatty esters are polymerized through the oxirane groups to obtain viscous polyether polyesters, followed by saponification and isolation, then the polyether polyalcs., polyether polyacids, or the water soluble and water insol. polyether polysalts are obtained. A selective non-ionizing catalyst ($AlCl_3$, $BF_3$, $FeCl_3$, $SnCl_4$) is used. The polymers obtained have application as adhesives, wax and wax additives, lubricant additives, textile finishers, plasticizers, polyether-polyester intermediates, polyester coatings, gelling agents, washing compds., washing compns., waterproofing fabrics, fungicides, insecticides, and metal ion precipitants. Thus, 90 parts methyl 9,10-epoxystearate was placed in a reaction vessel and 4.2 parts boron trifluoride etherate added over 1-1.5 hrs. at < 10°. The mixture was stirred 5 hrs. KOH (20 parts) in 375 parts MeOH was added to the mixture, and the solution refluxed 5 hrs. Toluene (2200 parts) and 40 parts concentrated HCl were slowly stirred in, and the mixture poured into a large volume of hot water. The organic layer was separated and heated at 29 in. pressure until the temperature remained at 125° for 15 min. Neutralization with the equivalent amount of KOH using an alc. solvent produced a polyether-polypotassium salt. The salt was isolated and dried by evaporation of the solvent. The product was a flaky solid, freely soluble in water. Similarly prepared were copolymers of methyl epoxystearate and epoxidized methyl esters of soybean acids to give viscous oils. $BF_3$ is used as a catalyst polymerizing Bu monoepoxystearate, methyl monoepoxystearate, methyl esters of epoxidized soybean acids, and copolymerizing methyl monoepoxystearate and methyl esters of epoxidized soybean acids. These esters prepared in this way were saponified with KOH, NaOH, or LiOH. Also prepared is the saponified polymer of epoxystearyl acetate using boron trifluoride etherate.

L6 ANSWER 27 OF 28 CAPLUS 
AN 1959:80435 CAPLUS
DN 53:80435
OREF 53:14544a-b
TI Resinous aromatic polyether-alcohols
PA Dow Chemical Co.
DT Patent
LA Unavailable
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | GB 811569 | | 19590408 | GB 1957-1889 | 19570118 |

AB Etherified derivs. of phenolic novolaks prepared with styrene oxide and an alkylene oxide containing 2-4 C atoms, a hydroxyalkylene oxide containing 3-5 C atoms, or an aryl glycidyl ether are specified. The reaction takes place at 100-220°. The catalyst used is an alkali metal hydroxide, e.g. NaOH or KOH, in an amount of 0.2-1.5% by weight of the novolak. Use of ethylene oxide and propylene oxide, as well as styrene oxide, is described. Cf. following abstract

L6 ANSWER 28 OF 28 CAPLUS 
AN 1954:77713 CAPLUS
DN 48:77713
OREF 48:13714i,13715a-c
TI Polyether alcohols

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IN   Glickman, Samuel A.
PA   General Aniline & Film Corp.
DT   Patent
LA   Unavailable
FAN.CNT 1
     PATENT NO.            KIND   DATE       APPLICATION NO.        DATE
     ---------------       ----   --------   --------------------   --------
PI   US 2618663                   19521118   US 1951-206519         19510117
AB   An improved process is described for the production of polyether alcs. by
     the simultaneous hydrolysis and reduction of polyether alkanal acetals
     (I).  I are prepared from vinyl ethers with acetals (cf. U.S. 2,165,962,
     C.A. 33, 8210.2; U.S. 2,487,525, C.A. 44, 3011b).  The process uses
     600-1000 lb./sq. in. H is at 75-90°, with a Ni catalyst
     and a H2O-soluble hydrolyzable metal salt in an aqueous medium at a pH of
     4.5-6.5.  E.g., MeCH(OEt)CH2CH(OEt)CH2CH(OEt)2 197 (from vinyl Et
     ether-di-Et acetal reaction) was added to H2O 54, (p-MeC6H4SO3)2Ni 3,
     Raney Ni 7.5 parts (calculated on a dry basis), and the mixture subjected to H
     at 1000 lb./sq. in. in a stainless-steel hydrogenation vessel of the
     Adkins rocking type at 75-80°; the reaction was complete in 4 hrs.
     and the cooled colorless mixture, filtered and distilled at reduced pressure,
     gave 130 parts 3,5-diethoxy-1-hexanol, b1 79°, d25 0.9273, n25D
     1.4308.  Also prepared are 3,5-dimethoxy-1-hexanol, b13 114°, d25
     0.9631, n25D 1.4329; 3,5,7,9,11-pentamethoxy-1-dodecanol, b0.25
     150-1°, d25 1.0037, n25D 1.4493; 3,5,7-trimethoxy-1-octanol, b0.15
     85-6°, n25D 1.4419, d25 0.9846; and mixed polymethoxy-1-ols, alc.
     n25D 1.4308, d25 0.9539.  The alcs. present in the mixture were
     3-methoxy-1-butanol, 3,5-dimethoxy-1-hexanol, 3,5,7-trimethoxy-1-octanol,
     3,5,7,9-tetramethoxy-1-decanol, 3,5,7,9,11-pentamethoxy-1-dodecanol, and
     higher alcs.


=> s l5 and polydispersity
         17204 POLYDISPERSITY
L7           0 L5 AND POLYDISPERSITY

=> s l5 and dispersity
          5061 DISPERSITY
L8           0 L5 AND DISPERSITY

=> s polydispersity
L9       17204 POLYDISPERSITY

=> s l9 and polyetherol
            27 POLYETHEROL
L10          0 L9 AND POLYETHEROL

=> s l9 and polyether alcohols
         84364 POLYETHER
        173790 ALCOHOLS
            72 POLYETHER ALCOHOLS
                 (POLYETHER(W)ALCOHOLS)
L11          0 L9 AND POLYETHER ALCOHOLS

=> s l9 and polymers
        915983 POLYMERS
L12       6428 L9 AND POLYMERS

=> s l12 and definition
         44442 DEFINITION
L13         10 L12 AND DEFINITION

=> d 1-10 bib abs

L13  ANSWER 1 OF 10  CAPLUS  COPYRIGHT 2007 ACS on STN
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AN 2004:507852 CAPLUS
DN 141:55394
TI Propylene polymer compositions and their metal vapor-deposited films with good adhesion, printability, and blocking resistance
IN Nakamura, Yasunori; Omori, Hiroshi
PA Nippon Polychemicals Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 30 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | JP 2004175884 | A | 20040624 | JP 2002-342524 | 20021126 |
| PRAI | JP 2002-342524 | | 20021126 | | |

AB The compns. comprise (A) propylene random copolymer containing 88-99.5 mol% propylene and 0.5-12 mol% ethylene and/or butene with (1) m.p. 115-150° (measured by DSC), (2) melt flow rate (MFRa) 1-30 g/10 min, (3) polydispersity index (PI; obtained from melt viscoelasticity measurement) 2.4-4, (4) soluble component content (measured by cross fractionation chromatog.) at ≤20° and ≤40°, ≤1.5% and ≤4.0%, resp., and (5) Mw of the soluble component at ≤20° and ≤40°, 0.1 + 104-6.0 + 104 and 0.1 + 104-8.0 + 104, resp. 100, (B) HDPE with d. 0.945-0.980 g/cm3, melt index (MIb) 1-1000 g/10 min, and MIb/MFRa 1-1000 0.01-5, (C) ethylene polymers with d. 0.910-0.980 g/cm3, melt index (MIc) 0.1-30 g/10 min, and MIc/MFRa 0.03-1 (<1) 0.01-5, (D) antiblocking agents with average particle diameter 1.0-5.0 µm, pore volume 0.45-1.7 mL/g, and abrasion loss of plastic wire ( definition given) ≤100 mg 0.01-0.7, (E) antioxidants with mol. weight ≥500 0.01-0.5, and (F) hydrotalcites 0.005-0.5 part. Thus, a composition comprising metallocene-catalyzed ethylene-propylene copolymer 100, HDPE (Novatec HJ 490) 1, ethylene polymer (Novatec HY 540) 1, silica (Mizukasil P 707) as an antiblocking agent 0.15, phenolic antioxidant (Irganox 1010) 0.10, and hydrotalcite (DHT 4A) 0.03 part was extruded, treated with corona discharge, and vapor-deposited with Al to give a film showing wettability index 40 dyne/cm, peeling strength with dry-laminated polypropylene film 125 g/15 mm, and good scratch resistance.

L13 ANSWER 2 OF 10 CAPLUS 
AN 2003:424638 CAPLUS
DN 139:117982
TI Proton NMR Characterization of Room-Temperature Aging after Modest Thermal Cycling in Isotactic Polypropylenes
AU VanderHart, D. L.; Snyder, C. R.
CS Polymers Division, National Institute of Standards and Technology, Gaithersburg, MD, 20899-8544, USA
SO Macromolecules (2003), 36(13), 4813-4826
CODEN: MAMOBX; ISSN: 0024-9297
PB American Chemical Society
DT Journal
LA English
AB A proton NMR method, based on simple Bloch-decay spectra in the solid state, is presented that enables one to follow, with excellent sensitivity, structural changes associated with aging in semicryst. polymers whose Tg is well below the aging temperature The method is demonstrated for two representative isotactic polypropylene (iPP) samples, a Ziegler-Natta product and a metallocene product. Starting with samples that had been melt crystallized at a cooling rate of 1 °C/min and then aged at ambient temperature for long periods of time, subsequent mild heating cycles between ambient temperature and temps. below 90 °C were applied. Such heating cycles remained more than 70 °C below the major crystalline melting temperature for iPP. Aging at 20 °C was monitored by NMR over aging times, 6 min < tage < 4 d, following those heating cycles. Changes

in the Bloch-decay spectra, corresponding to a lower limit of 2-3% of the mass of iPP being transformed from mobile to rigid components, accompanied the aging process over the 4 d period. Moreover, the time dependence was linear in log(tage). It was further shown that the population of those noncryst. (NC) stems with the highest mobility was most strongly reduced by aging; this observation does not, however, unambiguously establish that these same chains were the actual stems participating in the newly formed structures. The aging process was also reversible in the sense that the structures formed could be completely destroyed by repeating the mild heating cycle. Attention was paid to the definition of crystallinity, and an operational definition of crystallinity for the NMR measurements was based on the component with a long (>150 ms) value of T1xz, the relaxation along the quantization axis of the toggling frame in a multiple pulse (MP) experiment The complementary NC component, by this definition, includes not only the motionally averaged protons seen in the Bloch-decay spectrum but also certain protons with more hindered motions which, by Bloch-decay criteria, appear rigid. Approx. 75% of the NC protons transformed by aging are converted to "crystalline" protons, using the T1xz definition; hence, the structural changes in aging seem to be dominated by crystallization, which we are comfortable to call secondary crystallization A quick assay of the longitudinal proton relaxation, T1H, was also made during aging. Aside from some changes originating from oxygen losses during heating, T1H was independent of aging time, and implications are pursued. Without making firm conclusions, observations are noted that may have relevance to the morphol. location of secondary crystallites and to the factors that influence the amount of material available for such crystallization The extent of secondary crystallization in the metallocene iPP is only modestly smaller than in the Ziegler-Natta iPP, although the metallocene iPP has a lower stereo-regio defect concentration, a narrower polydispersity, and no expected "amorphous fraction". Significant secondary crystallization would also characterize a defect-free iPP with low polydispersity.

RE.CNT 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2002:364027 CAPLUS
DN 136:370933
TI Amino ethers as modification agents for anionic polymerization
IN Gruen, Michael; Knauf, Thomas; Braubach, Wilfried
PA Bayer Ag, Germany
SO Eur. Pat. Appl., 7 pp.
CODEN: EPXXDW
DT Patent
LA German
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | EP 1205495 | A2 | 20020515 | EP 2001-125350 | 20011029 |
| | EP 1205495 | A3 | 20030618 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | | |
| | DE 10055497 | A1 | 20020529 | DE 2000-10055497 | 20001109 |
| | CA 2361080 | A1 | 20020509 | CA 2001-2361080 | 20011106 |
| | JP 2002161108 | A | 20020604 | JP 2001-340636 | 20011106 |
| | US 2002082370 | A1 | 20020627 | US 2001-11592 | 20011106 |
| | US 6583246 | B2 | 20030624 | | |
| | BR 2001005079 | A | 20020625 | BR 2001-5079 | 20011108 |
| | HU 200104787 | A2 | 20020928 | HU 2001-4787 | 20011108 |

PRAI DE 2000-10055497 A 20001109
OS MARPAT 136:370933
AB R1R2N[(CH2)mO]nX [I; R1, R2 = C1-10 alkyl, C5-8 cycloalkyl, C6-10 aryl, C7-15 aralkyl; X = (CH2)pNR3R4; R3, R4 = any definition for R1, R2; m, n, p = 1-6] are useful for regulation of the microstructure of elastomeric conjugated diene polymers and copolymers with vinyl aromatic monomers. I have higher b.ps. than previous art modifiers and form thermally stable complexes with living anionic polymer chain ends. For example, 1,3-butadiene-styrene copolymer manufactured by polymerizing 36 g styrene
and 112 g 1,3-butadiene in 850 g hexane containing 0.22 mmol (Me2NCH2CH2)2O and 1.06 mmol BuLi at 60-70° under N, and stabilizing the copolymer with Vulkanox BHT had Mooney ML(1+4) viscosity 28, 1,4-cis content 22.2%, 1,4-trans 34.9%, 1,2-vinyl 20.8%, styrene 22.2%, Mw 238.829 g/mol, polydispersity 1.11, and Tg -51.7°.

L13 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2001:59629 CAPLUS
DN 134:252863
TI Model interpretation in static light scattering
AU Rother, Gudrun
CS Max Planck Institute of Colloids and Interfaces, Am Muhlenberg Golm, Potsdam, 14424, Germany
SO Macromolecular Symposia (2000), 162(Data Evaluation in Light Scattering of Polymers), 45-61
CODEN: MSYMEC; ISSN: 1022-1360
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
AB For sufficiently large species, the fit of the exptl. obtained scattering curve with theor. calculated ones for different basic structure types (sphere, random coil, rod, wormlike chain and others) gives information about structure type, polydispersity, structure d., mol. parameters Mw and sz, and characteristic size parameter am, definition of which depends on used structure model type. An iterative algorithm is offered to sep. bimodal scattering curves into the curves of the components and to characterize the single ones. The theor. background of such procedures and a corresponding software system will be presented. Application examples demonstrate the efficiency of the procedures.
RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1996:228730 CAPLUS
DN 124:261797
TI Molecular Weight Distributions in Nitroxide-Mediated Living Free Radical Polymerization: Kinetics of the Slow Equilibria between Growing and Dormant Chains
AU Veregin, Richard P. N.; Odell, Peter G.; Michalak, Lora M.; Georges, Michael K.
CS Xerox Research Centre of Canada, Mississauga, ON, L5K 2L1, Can.
SO Macromolecules (1996), 29(10), 3346-52
CODEN: MAMOBX; ISSN: 0024-9297
PB American Chemical Society
DT Journal
LA English
AB A kinetic approach, recently developed to calculate the effect of exchange between a dormant and an active species in group transfer polymerization (GTP), has been applied to living free radical polymerization moderated by nitroxide stable free radicals. A general solution for the mol. weight distribution as a function of conversion has been derived. The solution depends only on the rate consts. for propagation, the trapping of the growing chains by nitroxide radical, and the release of the growing chain. The general form of the solution is the same in GTP and the stable free radical-mediated

polymerization (SFRP), except for the definition of the three consts. Using the measured and known exptl. rate consts. for SFRP and fitting to the only unknown rate constant, that for reversible chain termination by the nitroxide radical, allow a quant. prediction of the mol. weight distribution with conversion for bulk free radical living polymerization of polystyrene. In this way a good fit to the exptl. polydispersity is obtained over a wide range of polymerization conditions. The calculated rate for the reversible termination is reasonable compared to known nitroxide-trapping reactions but is over 3 orders of magnitude slower than for a diffusion-controlled reaction, on the same order as the rate constant for polystyrene radical-radical termination. Nevertheless, because of the excess nitroxide present, trapping is fast enough to ensure a high rate of exchange of growing and dormant chains, resulting in narrow polydispersities at high conversion. The very good fit to this model indicates that neither initiation nor termination are important to the conversion dependence of the mol. weight distribution, as neither were taken into account in the kinetic model. This is further support for the current understanding of the mechanism and kinetics of the SFRP process. The polydispersity in the bulk living free radical polymerization mediated by nitroxide is controlled by the exchange rate between the growing and dormant chains. At high conversion where the rate of polymerization is high, there can be some irreversible chain termination and some autopolymn.

L13 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1994:147385 CAPLUS
DN 120:147385
TI On the definition and use of deviation functions for treatment of quasi-elastic light-scattering data
AU Sundeloef, Lars Olof; Porsch, Bedrich
CS Uppsala Univ., Uppsala, S-751 23, Swed.
SO Collection of Czechoslovak Chemical Communications (1993), 58(11), 2535-51
CODEN: CCCCAK; ISSN: 0010-0765
DT Journal
LA English
AB A theory for deviation functions defined as the deviation from strict Gaussian behavior of elec. field correlation functions obtained from Quasi-Elastic Light Scattering expts. is presented. Its application to systems with different types of particle size distributions is treated both theor. and by numerical examples. Expressions are given for distributions where the correlation function can be expressed as a Laplace transform in closed form. The theory is also compared with expts. on solns. of polymers with a variety of mol. mass distributions. Even if the procedure based on deviation functions cannot compete with other numerical inversion methods in the direct determination of mol. size distributions it may substantially help to visualize the magnitude of the effect of polydispersity and serve as a prerequisite for a decision concerning how far it is meaningful to pursue more precise calcns. This is essentially equivalent to a judgement of the noise level of the experiment and the information content to be expected.

L13 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1991:538012 CAPLUS
DN 115:138012
TI Sprayable hot-melt polyolefins forming uniform spray patterns
IN Kehr, Helmut; Kuehnle, Adolf; Schleinzer, Matthias
PA Huels A.-G., Germany
SO Ger. Offen., 8 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|

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PI   DE 4000696          A1     19910718    DE 1990-4000696         19900112
     EP 442045           A2     19910821    EP 1990-121755          19901114
     EP 442045           A3     19920318
     EP 442045           B1     19931006
         R: AT, BE, CH, DE, ES, FR, GB, LI, NL, SE
     AT 95544            T      19931015    AT 1990-121755          19901114
     ES 2044375          T3     19940101    ES 1990-121755          19901114
PRAI DE 1990-4000696     A      19900112
     EP 1990-121755      A      19901114
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AB The title compns., with rheol. suitable for atomization or spin spraying, contain essentially amorphous poly-α-olefins with softening point (s.p.) 70-130°, melt viscosity (ηm) 1-20 Pa-s at 190°; d. <0.90, needle penetration (NP) 0.8-4 mm, weight-average mol. weight (Mw) ≤80,000, and polydispersity ≤6. 1-Butene-C2H4-C3H6 copolymer with sp. 104°, ηm 2.7 Pa-s, d. 0.87, NP 2.3, Mw 45,000, and polydispersity .apprx.6, when sprayed at 190°/4 bar, 3.8 g/min, and 5 m/min, had spray width (all ratings 1 best, 6 worst) 1, spray uniformity 2, edge definition 2, thread fineness 1, and freedom from flaws 1; vs. 3, 4, 4, 3, and 4, resp., when the above properties were 85, 8.5, -, 1.5, 65,000, and .apprx.9, resp.

L13 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1990:140248 CAPLUS
DN 112:140248
TI Influence of molecular weight and molecular weight distribution on the tensile properties of amorphous polymers
AU Bersted, B. H.; Anderson, T. G.
CS Res. Cent., Amoco Chem. Co., Naperville, IL, 60566, USA
SO Journal of Applied Polymer Science (1990), 39(3), 499-54
CODEN: JAPNAB; ISSN: 0021-8995
DT Journal
LA English
AB Tensile property data for polystyrene (I) samples of varying polydispersity are correlated with various parametric measures of mol. weight Traditional measures of mol. weight, i.e., number-average, weight-average, and z-average mol. wts., are unable to account for the variation of tensile properties with mol. weight However, a new mol. weight parameter, termed the failure property parameter, is able to provide a single relationship between tensile strength and the parameter for both the broad and narrow distribution polymers. The form of this parameter is consistent with its having origins in the view that it is the entanglement network in an amorphous polymer that provides the observed strength properties. Specifically for I the failure property parameter results indicate that material below 60,000 mol. weight does not contribute to polymer strength. Although the results are specifically for I, the arguments used to develop the failure property parameter are not dependent on polymer chemical structure. Consequently, both the concepts and definition of this new parameter are applicable to all amorphous polymers.

L13 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1949:40609 CAPLUS
DN 43:40609
OREF 43:7295i,7296a-b
TI The "inhomogeneity" of polymers
AU Jellinek, H. H. G.
SO Journal of Polymer Science (1949), 4, 399-400
CODEN: JPSCAU; ISSN: 0022-3832
DT Journal
LA Unavailable
AB The definition by Schulz (C.A. 30, 4379.7) for the inhomogeneity of a polymer sample serves as a guide in many cases, e.g., degradation of

polymers, but may be quite misleading in others. This is illustrated by the case of polymerization consisting of an uncatalyzed bimol. initiation reaction, termination brought about by disproportionation. It would be more appropriate to measure the inhomogeneity of polymers by their "spread" U = $\sigma 2$ = number average (weight average - number average) = Pn (Pw - Pn), where $\sigma$ = root-mean-square deviation for the number distribution.

L13 ANSWER 10 OF 10 CAPLUS 
AN 1937:55748 CAPLUS
DN 31:55748
OREF 31:7722g-i,7723a-g
TI Measurements of concentration gradients in sedimentation and diffusion by refraction methods. Solubility properties of potato starch
AU Lamm, Ole
SO Nova Acta Regiae Societatis Scientiarum Upsaliensis (1937), 10(No. 6), 115 pp.
CODEN: NOARAM; ISSN: 0029-5000
DT Journal
LA Unavailable
AB Two refraction methods based on classical principles are worked out for determining concentration gradients. They utilize the curvature suffered by light in passing through the optical inhomogeneity of the concentration gradient. They are simple of manipulation and capable of real accuracy. The fundamental methods are adapted to practice for different branches of sedimentation and diffusion studies. Colorless substances can be examined in the ultracentrifuge independent of adsorption bands in the ultraviolet region. In sedimentation equilibrium of macromol. substances a higher degree of accuracy is attained than was previously possible. In sedimentation-velocity measurements a detailed picture of the process in the ultracentrifuge cell can be obtained even for complicated solns. with several sedimenting components. In favorable cases the sedimentation of components of very low concentration compared to the whole content of sedimenting material can be measured. The methods depending upon n and upon light absorption are complementary and together cover a wide range. An accurate procedure for measuring diffusion consts. is described in detail. A new diffusion cell with plane parallel walls and a slide leveling device is described. The measurement gives the derivative of the concentration function at different times, which is used in the calcns. by transforming the exptl. curve into normal coordinates. The resulting reduced curve is compared with an ideal curve (the error curve) which leads to conclusions regarding the mono- or polydispersity of the substance and permits normalizing the non-uniformity with respect to diffusion consts. as a characteristic of the polydispersity. The method makes it possible to study charge effects and other disturbances in the ideal diffusion process quantitatively. Absence of systematic errors in the determination of the diffusion constant was proved by control measurements at a constant gradient of cane sugar in glycerol under varying conditions. The diffusion consts. of KCl, pentaerythritol and DOH in water were determined The sedimentation equilibrium of the protein amandin in buffered salt solution was measured in the ultracentrifuge, and the special methods of observation worked out for this case are described. The n of plane parallel glass plates in ultraviolet light was measured with a simple photographic procedure that is described. Dispersity problems of potato starch in aqueous solution were examined critically from the point of view of definition of the material and the character of the solubility The behavior of starch toward concentrated solns. of $ZnCl_2$ and $NaHgCl_2$ in water was studied. As compared with other methods of dissolving starch the dispersing action of these solns. proved to lead to a well-defined final dispersity, independent of the special character of the salt. The appearance of an

undissolved remainder by this treatment is discussed in connection with the individuality of different starch prepns. The possibility of a denaturation of the starch grain during the process of isolation from the plant material or other treatments is considered. The partial or complete solubility of potato starch in the salt solns. suggests the characterization of different starches according to their dispersity. The starch solns. were examined in the ultracentrifuge and by free diffusion in water after removal of salts by dialysis. The measured dispersity is characteristic of the special starch specimen but cannot be regarded as a property of starch in general. The solns. are polydisperse and are nonuniform also in respect to particle charge as proved by separation through electrodialysis. They possess an average mol. weight of greater order of magnitude than has been observed before in starch solns.; they are rather stable and, especially, do not give any precipitate (retrogradation) on standing.